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# Designing and teaching a practical orthography of Nigromante Zapotec

Erin Donnelly and Jorge Beltrán Luna

UC Berkeley; UC San Diego  
edonnelly@berkeley.edu; jbeltran@ucsd.edu

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## Intro to NMZ

- Language status and literacy

- Linguistic features of NMZ

## Northern Zapotec orthographies

- Orthography design and obstacles

- Aims of workshop

- Structure of Workshop

- Obstacles in teaching

- General obstacles

- Language-specific obstacles

- Tone

- Laryngealization

- Substantial intra-dialectal variation

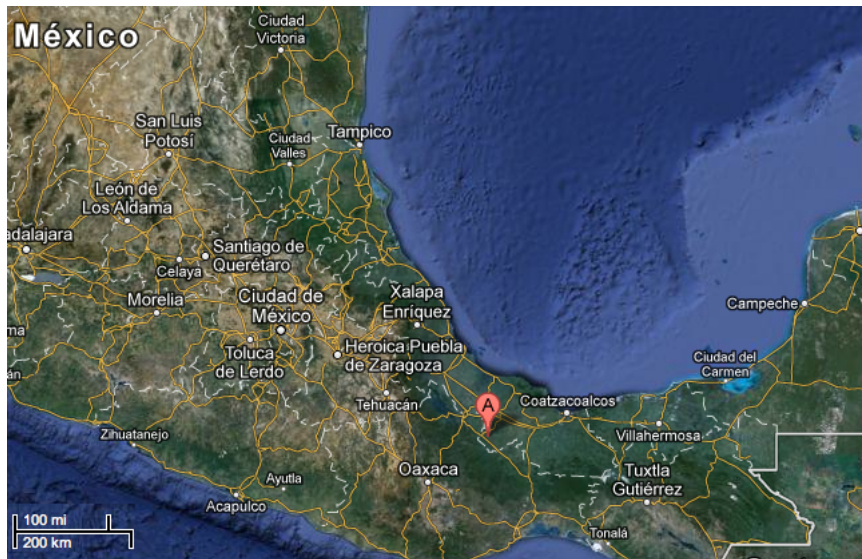
## Conclusions

## Nigromante Zapotec (NMZ)

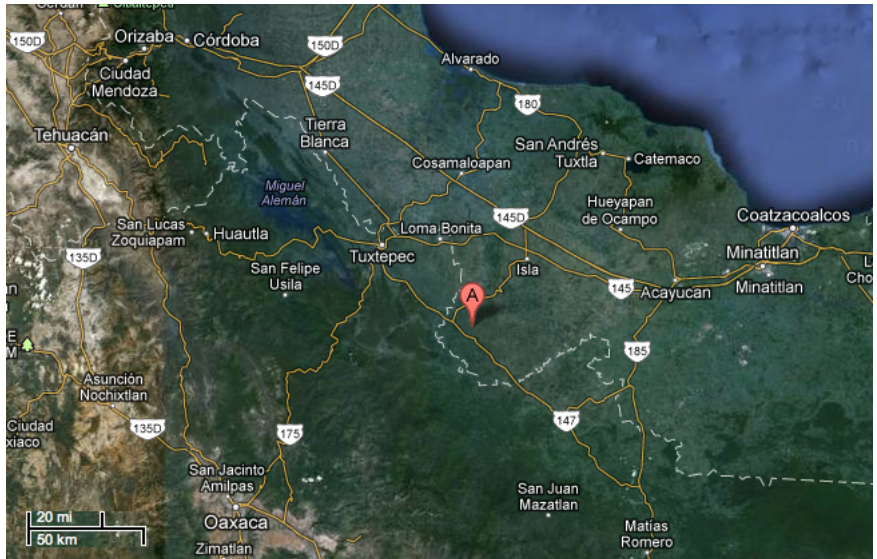
- Spoken in El Nigromante, Veracruz- Lozoga'
- Eastern Oto-Manguean
- ~2,500 speakers
- Endangered and virtually undocumented
- One of many dialects of Cajonos Zapotec

## Literacy in NMZ and Spanish

- 70-80 percent of speakers are literate in Spanish
- Very few speakers are literate in NMZ
- All writing in Spanish
- Official business conducted in Spanish



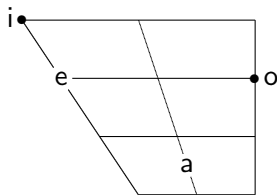
- └ Intro to NMZ
- └ Language status and literacy



# Nigromante Zapotec consonants

		Labial	Alveolar	Post-Alveolar	Velar	Uvular
<b>Stop</b>	Fortis	p	t		k	
	Lenis	b	d		g	
<b>Fricative</b>	Fortis		s	ʃ		χ
	Lenis		z	ʒ		
<b>Affricate</b>	Fortis			tʃ		
	Lenis			dʒ		
<b>Rhotic</b>			r			
<b>Lateral</b>			l	ɭ		
<b>Nasal</b>		m	n	ɲ		
<b>Glide</b>		w		j		

## NMZ vowels and suprasegmentals



- Four-vowel system, with [u] as an allophone of /o/ and /w/
- Each vowel is a TBU, with five possible tones:
  - **H**igh, **M**id, **L**ow, **F**alling (M>L), **R**ising (M>H)
- Vowels have two possible modalities: plain **V** and ‘checked’ **V?**



## NMZ phonology and literacy

- Literacy in Spanish poses difficulties for speakers learning to write NMZ
- Conscious awareness of NMZ phonemes must be taught
- Biggest challenges are fricatives, affricates, and sonorants
- Vowels in NMZ and Spanish are quite similar, but speakers misperceive /u/
  - /u/ is a phoneme in Spanish, but [u] is an allophone of /o/ and /w/ in NMZ
  - Speakers with Spanish literacy recognize NMZ [u] as a phoneme and write it thus

## Northern Zapotec orthographies

- Nonspecialist indigenous teachers in 1985 (Romero Frizzi 2003)
- Furthered by "Coordinadora para la Lecto-escritura del Sa de la Sierra Norte", an indigenous teachers' commission
- Alfabeto AZACHIS -Asamblea de Autoridades Zapotecas y Chinantecas de la Sierra (Molina Cruz 2004)

## SIL orthographies of Cajonos Zapotecs

- Yalalag: 24 consonants and 4 vowels (Lopez and Newberg 2005)
- Yatzachi: 37 consonants and 6 vowels (Butler 2000)
- Zoogocho: 31 consonants and 5 vowels (Long and Cruz 2000)

## Development of NMZ orthography

- Based on the pre-existing AZACHIS alphabet
- Tailored to the phonology of NMZ
- Designed for practicality and flexibility
- Ideally, speakers will be able to read and write their own Zapotec, and understand writings from other Cajonos Zapotec towns

## Choices to be made

- Phonemes /ɕ, χ, ʑ, dʒ, ɟ, ã, h/
- Vowel quality contrasts- V, V?
- When to write tone

## Orthographic decisions

Guiding principles:

- Use as few characters as possible
- Utilize as many familiar symbols as possible
- Encourage revisions where appropriate to dialect

## Orthographic decisions

AZACHIS orthography:

- $\langle x \rangle = /ɣ/$
- $\langle xh \rangle = /ʒ/$
- $\langle dx \rangle = /dʒ/$
- $\langle j \rangle = /ɣ/$
- $\langle lh \rangle = /ɹ/$
- $\langle nh \rangle = /r̃/$
- $\langle V' \rangle = /Vʔ/$

## Immediate goals of workshop

- Learn to read and write Zapotec
- Learn basic phonological properties of Zapotec
- Speakers will appreciate linguistic differences between their two languages, Zapotec and Spanish
- Learn cultural and historical facts about El Nigromante and (Northern) Zapotecs



## Immediate goals of workshop

- Combat negative ideologies surrounding Zapotec
- Encourage younger speakers and semi-speakers to use Zapotec, especially on social media
- Standardize the alphabet already familiar by speakers
- Show that Zapotec is not “hard” to write

## Ultimate goals of workshop

- Increase village-wide Zapotec literacy
- Encourage the creation, distribution, and public use of materials written in Zapotec
- Increase use of Zapotec, both spoken and written
- Create awareness of endangerment
- Language revitalization

## Workshop

- ~8 participants
- Ages 11-37
- **Expectation:** Zapotec *speakers* were invited to participate
- **Reality:** Spectrum of full speakers to non-speakers
- Wide range of education

## Structure of workshop

- Classroom-like setting
- Meetings in a Nigromante elementary school
- Students were encouraged to interrupt with questions
- Open to disagree with each other and teacher → **individual ownership**
- Small group size allowed for group discussions

## Classroom dynamics

- Students were assigned homework, which was reviewed at the beginning of each lesson
- Homework typically required students to find words with sounds learned in previous lesson
- Some students weren't speakers, requiring them to interview relatives who do speak NMZ
- Games and group work used to review and practice material

## Introducing new characters

- Characters were grouped primarily by natural class
  - Familiar characters introduced first
- ① Jorge introduced a character by writing it on the board
  - ② Provided one or two words that contain said character
  - ③ Asked students to provide examples of other lexical items with character, meaning of lexical item

## Language use in the classroom

**Goal:** use all Zapotec

**Reality:** some Zapotec, but mostly Spanish

- Students and teacher more comfortable discussing grammatical concepts in Spanish
- Any discussion of workshop-related concepts depended heavily on Spanish loan words
- Not all students fluent in Zapotec

## Literacy as community-owned

Jorge taught all lessons → **community ownership**

- Member-to-member exchange of knowledge
- Zapotec-developed tool for other Zapotecs to use
- Out-group education applied to community-internal improvement
- Differences between the phonology/orthography of NMZ versus other towns discussed
- Orthography is similar to the overall Cajonos Zapotec orthography, but this style of speaking and writing is uniquely *Lozoga'*



## Obstacles in teaching an NMZ orthography

- ① General obstacles
- ② Language- or family-specific obstacles:
  - ① Tone
  - ② Laryngealization
  - ③ Variation between Cajonos varieties

## General obstacle: literacy in Spanish

- Students originally interpreted characters as if Spanish orthography
- No basis on which to interpret characters used differently than in Spanish
  - For example, <dx>
- Some single Zapotec characters repurpose Spanish characters
  - Spanish <j> = /x/, no /χ/

## General obstacle: “foreignness” of NMZ phonology

- Speakers are aware that Spanish and NMZ do not have the same phonologies
- Commonly-cited folk-linguistic differences are “tone” and “accent”

**Solution:** Increase awareness of phonology via orthographic symbols.

## Teaching tone

(1) **gá** benen'

gá      bene? =n  
where person =DEM  
'Where is s/he from?'

(2) **gà** bene'

gà      bene?  
nine person  
'nine people'

(3) bene **ga**

bene    ga  
person Chinantec  
'a Chinantec'

## Approach to teaching tone

- Provide guidance for recognizing tones
  - *gá* 'where' is H, *gà* 'nine' is L.
  - What are other words with these tones?
- Tone-marking iconic of pitch

Practice is key!

## Collaboration: when to write tone?

Worked with speakers to create guidelines for when to write tone:

- 1 Minimal pairs
- 2 Context doesn't disambiguate
- 3 Surface tone, not underlying
  - What do you hear?
- 4 Use minimal pair sets we reviewed for help

Laryngealization is also contrastive on vowels:

(4) gǎ gǎʔ

gǎ gǎʔ  
nine basket  
'nine baskets'

(5) dxaka dxoʔ gǎʔ

dʒ= ak =a dʒoʔ gǎʔ  
HAB= make =1s cough phlegm  
'I have a cough with phlegm'

## Teaching laryngealization

- Binary contrast → easier to teach
- Compared minimal pairs for laryngealization
- Asked speakers to produce examples of V?



## NMZ vs. other Cajonos varieties

- No /ʃ/ or /ʒ/
- No phonemes /ts/ or /dz/
- Some Cajonos varieties have /ə/
- Apparent time shift [ɺ] > [r] in NMZ, other Cajonos varieties maintain /ɺ/

## Written material in Cajonos Zapotec

Northern Zapotec novelists:

- Javier Castellanos (Santo Domingo Yojovi Zapotec)
- Mario Molina Cruz (Villa Hidalgo Yalalag Zapotec)

Produced by SIL International:

- Pedagogical material
- Children's books
- Short story volumes
- Dictionaries

- └ Obstacles in teaching
- └ Language-specific obstacles

## Teaching to recognize and read variation

Nigromante Zapotec	Yatzachi Zapotec	Betaza Zapotec
gitʃa? 'hair'	gitʃa?	gitsa?
tʃa? 'cazuela (large pot)'	ʃa?	tsa?
ʃaãa? 'my father'	ʃa?	ʃan
sibe 'high'	sibə	sib
yo? 'house'	yoʔo	yô?

## Teaching to recognize and read variation

Other Zapotecs write/say:

- <ts> for <ch>
- <x> for <ch>
- <x> for <ɕ>
- <ə> for <e>
- <V'V> for <V'>

Context usually allows for near-complete mutual intelligibility,  
both in writing and speaking

## Lessons learned regarding orthography development

- Literacy can help increase revitalization of spoken language
- Draw from existing systems, making changes where phonologically required
- Community and individual ownership of orthography is ideal

## Lessons learned regarding teaching orthography

Faster mastery of material came from:

- Teaching to the phonology using lexical items
- Speaker-produced minimal pairs for “difficult” phonemes
- Collaboration regarding when to write suprasegmentals

## Lessons learned regarding documenting and teaching variation

- Lexical differences best tokens of dialect variation
- *Trust* speakers' knowledge of intra-dialectal variation
- Focusing too much on variation is unhelpful

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